

FILEID**FORINIUND

B 1

The diagram illustrates the hierarchical assembly of a 16x16 grid. It starts with a single large square labeled 'SSSSSSSS'. This square is divided into four quadrants, each containing a 4x4 grid of 'SS' blocks. These are further subdivided into four 2x2 blocks labeled 'S'. The 'S' blocks are then assembled into 2x2 blocks labeled 'I' and 2x2 blocks labeled 'L'. Finally, the 'L' and 'I' blocks are combined to form the full 16x16 grid.

```
1 0001 0 %TITLE 'FOR$INIUND - Initialize Fortran underflow handling'  
2 0002 0 MODULE FOR$INIUND (  
3 0003 0           IDENT = '1-001'          ! File: FORINIUND.B32 Edit: JAW1001  
4 0004 0           ) =  
5 0005 1 BEGIN  
6 0006 1 ++  
7 0007 1  
8 0008 1 *****  
9 0009 1 *  
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28 0028 1 *  
29 0029 1 *****  
30 0030 1 *  
31 0031 1 *  
32 0032 1 FACILITY: Fortran Support Library  
33 0033 1  
34 0034 1 ABSTRACT:  
35 0035 1  
36 0036 1 This module contains a condition handler for floating underflow  
37 0037 1 exceptions, an exit handler to report the number of underflows  
38 0038 1 at image exit, and an initialization procedure which establishes  
39 0039 1 the condition handler for Fortran main programs.  
40 0040 1  
41 0041 1 ENVIRONMENT: Runs at any access mode - AST reentrant  
42 0042 1  
43 0043 1 AUTHOR: John A. Wheeler, CREATION DATE: 21-Aug-1981  
44 0044 1  
45 0045 1 MODIFIED BY:  
46 0046 1  
47 0047 1 1-001 - Original. JAW 21-Aug-1981  
48 0048 1 --  
49 0049 1
```

```
51      0050 1 %SBTTL 'Declarations'  
52      0051 1  
53      0052 1      SWITCHES:  
54      0053 1  
55      0054 1  
56      0055 1      SWITCHES ADDRESSING_MODE (EXTERNAL = GENERAL, NONEXTERNAL = WORD_RELATIVE);  
57      0056 1  
58      0057 1  
59      0058 1      LINKAGES:  
60      0059 1  
61      0060 1          NONE  
62      0061 1  
63      0062 1      TABLE OF CONTENTS:  
64      0063 1  
65      0064 1  
66      0065 1      FORWARD ROUTINE  
67          FOR$INIT_UNDER;  
68      0067 1  
69      0068 1  
70      0069 1      INCLUDE FILES:  
71      0070 1  
72      0071 1  
73      0072 1      REQUIRE 'RTLIN:RTLPSECT';  
74      0167 1  
75      0168 1  
76      0169 1      MACROS:  
77      0170 1  
78      0171 1          NONE  
79      0172 1  
80      0173 1      EQUATED SYMBOLS:  
81      0174 1  
82      0175 1          NONE  
83      0176 1  
84      0177 1      FIELDS:  
85      0178 1  
86      0179 1          NONE  
87      0180 1  
88      0181 1      PSECTS:  
89      0182 1  
90      0183 1  
91      0184 1      PSECT  
92          PLIT = LIB$INITIALIZD ( READ, NOWRITE, NOEXECUTE, NOSHARE, NOPIC,  
93          CONCATENATE, GLOBAL, ALIGN (2), ADDRESSING_MODE (GENERAL) );  
94      0187 1  
95      0188 1      +  
96          Make LIB$INITIALIZD psect contribution so LIB$INITIALIZE procedure  
97          will call FOR$INIT_UNDER, which will establish FOR$UNDERFLOW HANDLER  
98          as default handler and make coroutine call back. LIB$INITIALIZD is  
99          used so that FOR$INIT_UNDER will be called before COM_STARTUP, whose  
100         address is in LIB$INITIALIZE psect.  
101      0194 1      -  
102      0195 1  
103      0196 1      BIND  
104          VECT = UPLIT (FOR$INIT_UNDER);  
105      0198 1  
106      0199 1      +  
107      0200 1      ! Now declare usual PSECTS
```

FOR\$INIUND
1-001

FOR\$INIUND - Initialize Fortran underflow handl
Declarations

E 1
16-Sep-1984 00:26:58
14-Sep-1984 12:32:01

VAX-11 Bliss-32 V4.0-742
[FORRTL.SRC]FORINIUND.B32;1

Page 3
(2)

```
108      0201 1 !-
109      0202 1
110      0203 1 DECLARE_PSECTS (FOR);           ! Declare PSECTs for FOR$ facility
111      0204 1
112      0205 1
113      0206 1 OWN STORAGE:
114      0207 1
115      0208 1     NONE
116      0209 1
117      0210 1 EXTERNAL REFERENCES:
118      0211 1
119      0212 1
120      0213 1 EXTERNAL ROUTINE
121      0214 1     LIB$INITIALIZE,
122      0215 1     FOR$UNDERFLOW_HANDLER;
123      0216 1
124      0217 1 !
```

```
126      0218 1 %SBTTL 'FOR$INIT UNDER - Initialize underflow handling'  
127      0219 1 GLOBAL ROUTINE FOR$INIT_UNDER (  
128      0220 1     CO_ROUT_INIT,  
129      0221 1     CLI_CO_ROUT  
130      0222 1 ) =  
131      0223 1  
132      0224 1 //++  
133      0225 1 | FUNCTIONAL DESCRIPTION:  
134      0226 1  
135      0227 1 | This routine is called by LIB$INITIALIZE during image startup.  
136      0228 1 | It establishes FOR$UNDERFLOW_HANDLER as a default underflow  
137      0229 1 | exception handler and makes a coroutine call back to LIB$INITIALIZE.  
138      0230 1  
139      0231 1  
140      0232 1  
141      0233 1 | CALLING SEQUENCE:  
142      0234 1     ret_status.wlc.v = FOR$INIT_UNDER (co_rout_init.ra.v,  
143      0235 1           cli_co_rout.ra.v)  
144      0236 1  
145      0237 1  
146      0238 1 | FORMAL PARAMETERS:  
147      0239 1     co_rout_init          Address of coroutine within  
148      0240 1           LIB$INITIALIZE  
149      0241 1     cli_co_rout          Address of coroutine within CLI  
150      0242 1           (not used)  
151      0243 1  
152      0244 1  
153      0245 1  
154      0246 1  
155      0247 1  
156      0248 1  
157      0249 1  
158      0250 1  
159      0251 1  
160      0252 1  
161      0253 1  
162      0254 1 | IMPLICIT INPUTS:  
163      0255 1     NONE  
164      0256 1  
165      0257 1  
166      0258 1 | IMPLICIT OUTPUTS:  
167      0259 1     NONE  
168      0260 1  
169      0261 1  
170      0262 1  
171      0263 2 | COMPLETION STATUS: (or ROUTINE VALUE:)  
172      0264 2     As returned by main program via LIB$INITIALIZE.  
173      0265 2  
174      0266 2 | SIDE EFFECTS:  
175      0267 2     Makes a coroutine call back to LIB$INITIALIZE, thereby leaving  
176      0268 2     the current frame on the stack.  
177      0269 2  
178      0270 2  
179      0271 2  
180      0272 2  
181      0273 2  
182      0274 1 | BEGIN  
183      0275 2     ENABLE  
184      0276 2     FOR$UNDERFLOW_HANDLER;  
185      0277 2  
186      0278 2 |+  
187      0279 2     | Make coroutine call back to LIB$INITIALIZE.  
188      0280 2 |  
189      0281 2  
190      0282 2     RETURN (.CO_ROUT_INIT) ();  
191      0283 2  
192      0284 1 | END;  
193      0285 1           ! End of routine FOR$INIT_UNDER
```

FOR\$INIUND
1-001

G 1
FOR\$INIUND - Initialize Fortran underflow handl 16-Sep-1984 00:26:58
FOR\$INIT_UNDER - Initialize underflow handling 14-Sep-1984 12:32:01

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[FORRTL.SRC]FORINIUND.B32;1

Page 5
(3)

:

.TITLE FOR\$INIUND FOR\$INIUND - Initialize Fortran unde
rflow handl

.IDENT \1-001\

.PSECT LIB\$INITIALIZD_,NOWRT,NOEXE, GBL,2

00000000' 00000 P.AAA: .ADDRESS FOR\$INIT_UNDER

VECT=

P.AAA

.EXTRN LIB\$INITIALIZE, FOR\$UNDERFLOW_HANDLER

.PSECT _FOR\$CODE,NOWRT, SHR, PIC,2

04 6D BC 0006 0000000G 00 04	CF DE 00002 00 FB 00007 04 0000B 0000 0000C 1\$: 7E D4 0000E 5E DD 00010 AC 7D 00012 03 FB 00016 04 0001D	<p>.ENTRY FOR\$INIT_UNDER, Save nothing MOVAL 1\$, (FP) CALLS #0, &CO_ROUT_INIT RET</p> <p>.WORD Save nothing CLRL -(SP) PUSHL SP MOVQ 4(AP), -(SP) CALLS #3, FOR\$UNDERFLOW_HANDLER RET</p>	: 0219 : 0263 : 0272 : 0274 : 0263
------------------------------	---	--	--

; Routine Size: 30 bytes, Routine Base: _FOR\$CODE + 0000

: 183 0275 1
: 184 0276 1 END
: 185 0277 0 ELUDOM

! End of module FOR\$INIUND

PSECT SUMMARY

Name	Bytes	Attributes
LIB\$INITIALIZD_ _FOR\$CODE	4 30	NOVEC,NOWRT, RD :NOEXE,NOSHR, GBL, REL, CON,NOPIC,ALIGN(2) NOVEC,NOWRT, RD : EXE, SHR, LCL, REL, CON, PIC,ALIGN(2)

COMMAND QUALIFIERS

BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/NOTRACE/LIS=LIS\$:FORINIUND/OBJ=OBJ\$:FORINIUND MSRC\$:FORINIUND/UPDATE=(ENH\$:FORINIUND
)

; Size: 30 code + 4 data bytes

FOR\$INIUND
1-001

FOR\$INIUND - Initialize Fortran underflow handl 16-Sep-1984 00:26:58 H 1
FOR\$INIT_UNDER - Initialize underflow handling

VAX-11 Bliss-32 V4.0-742

Page 6

: Run Time: 00:02.0
: Elapsed Time: 00:07.4
: Lines/CPU Min: 8436
: Lexemes/CPU-Min: 18761
: Memory Used: 17 pages
: Compilation Complete

0181 AH-BT13A-SE
VAX/VMS V4.0

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